



1 June 1960

PHOTOGRAPHIC RECTIFIER

Report of Technical Progress

I. Progress During May, 1960

Design has been completed for all units of the Photo Reader. Fabrication of all parts for the first equipment are complete except:

Inductosyn Mounting
Master Control Unit
Servo Amplifier

Inductosyn Amplifier
Dodging Commutator
Rotation Lock

Fabrication of all items for Equipments 2, 3 and 4 is forty (40) per cent complete.

Cabling is in process on the first equipment. Power Supplies have been installed and operated with the inter-connecting control circuitry.

II. Principal Problems

The chief problems encountered have been caused by slow delivery of purchased parts, design modifications required, and the extended fabrication time.

Slow delivery of the inductosyn has delayed fabrication of the inductosyn mounting and the inductosyn servo amplifier. Other delays in delivery, such as the lenses have not yet been a problem. A test lens is on hand to make preliminary checks. A delivery problem also exists with cathode-ray tubes, which has not been critical, however, because cathode-ray tubes for the first equipment are on hand. STATINTL

The most significant modification required in design involved the Photo Multiplier Assembly Servo Drive. The originally designed Servo Amplifier was found to be inadequate to drive the load due to excessive heating, and a new design was required. This involved the invention of a new circuit (for which patents will be applied). It has been assembled, tested, and found to be satisfactory. Other

Declass Review by NIMA/DOD

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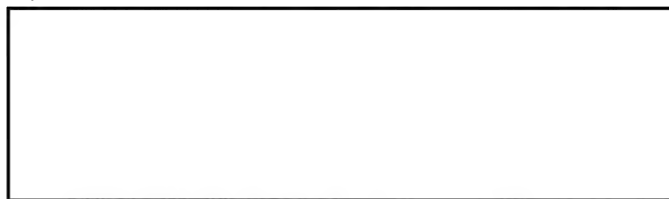
modifications due to design error have been negligible; however, testing during the months of June and early July will point out the need for additional modifications not now envisioned.

III. Expected Progress During June, 1960

Fabrication of the components for the first equipment will be completed during June, as well as much of the fabrication for the balance of equipments. We will strive to complete assembly of the first equipment during June. Areas where this will be most difficult are the Photo Transmission System, the Scan Servo Amplifier and the Inductosyn. The cable assembly will not be completed in June largely because cabling of the first equipment must be made consistent with the system operation. Therefore, the wiring of each sub-system is being checked before making additional installation. Cabling of the first unit is part of the system test stage and will not be completed until July.

IV. Summary

Several delays in the schedule have occurred in the past three months. These have been caused by delay in starting Photo Transmission design, delays in information concerning purchased parts, and design errors occurring during the period of accelerated activity. With the completion of the design phase and accelerated fabrication, we hope to regain the original schedule. Early test results have shown that design details, though accelerated, have been effectual. At present, the additional costs that result from the problems mentioned herein may be compensated by savings realized in other areas. STATINTL



System Manager

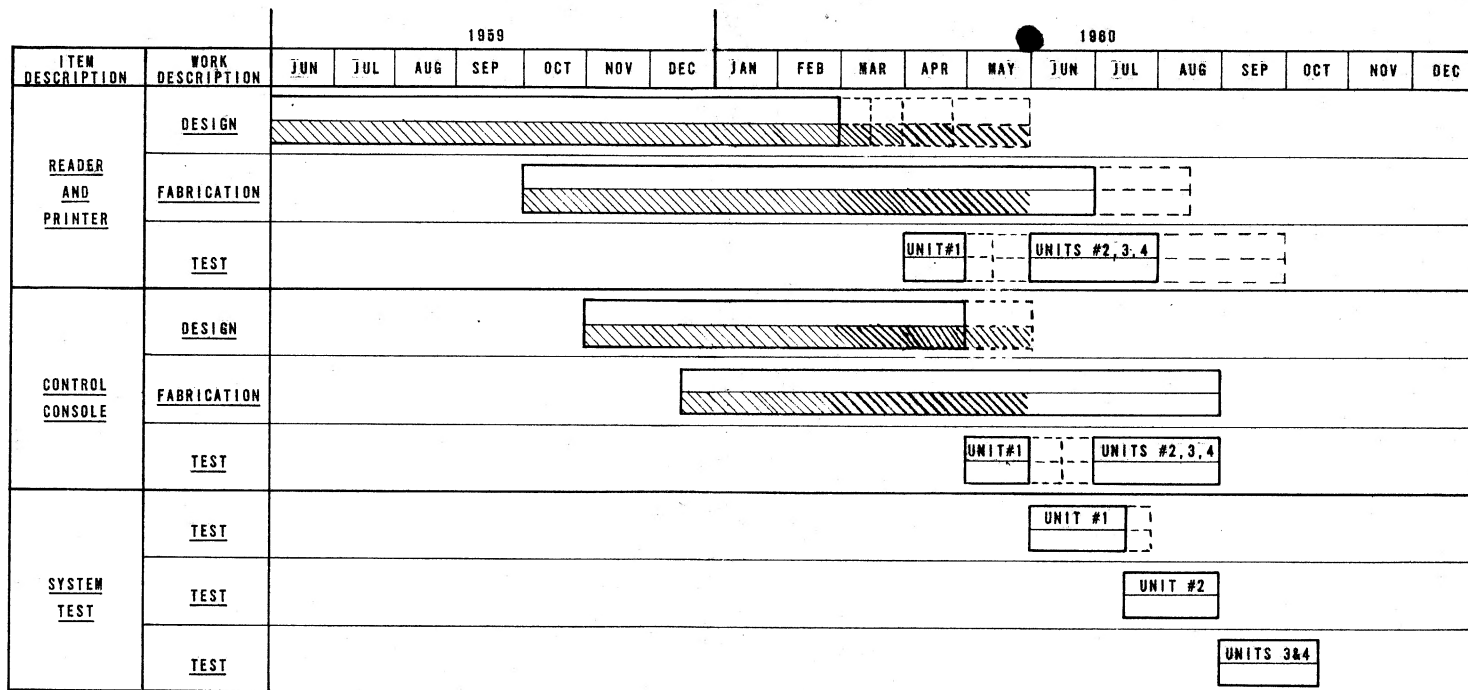
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PHOTOGRAPHIC RECTIFIER-PRINTER WORK SCHEDULE AND PROGRESS CHART



1 June 1960

PHASE DIAGRAM FOR READER

<u>ASSEMBLY</u>	<u>PRE DESIGN</u>	<u>DESIGN COMPLETE</u>	<u>RELEASED</u>	<u>PURCHASED PARTS</u>	<u>FABRICATION</u>	<u>ASSEMBLY</u>	<u>TEST AND REMARKS</u>
Structure	Complete	Complete	Complete	Complete	One Complete Three In Work	In Work	
C.R.T. Housing	Complete	Complete	Complete	Complete	One Complete	One Complete	
C.R.T. Elect. Parts	Complete	Complete	Complete	One Complete	One Complete	One Complete	
Track Assembly - X Drive	Complete	Complete	One Complete	Complete	One Complete	In Work	
Lead Screw	Complete	Complete		One Complete	One Complete	Complete	
P.M.T. Drive & Servo	Complete	Complete	Complete	One Complete	One Complete Three In Work	In Work, Three One Complete	
Platen and Index Assembly	Complete	Complete	One Complete	One Complete	One Complete	In Work	Reticles and Align. Sys. not complete
Transducer	Complete	In Work		On Order	In Work		
P.M. Assy & Video Amp.	Complete	Complete	Complete	Complete	Complete	One Complete Two In Work	
Valve - Pneu. and Vac.	Complete	Complete	Complete	Complete	Complete	In Work	
Doors	Complete	Complete	Complete	8 Ordered	1 Set Complete 3 Sets In Work	In Work	
X Deflection Amp.	Complete	Complete	Complete	Complete	Two Complete	One Complete	
X Sweep Attenuator	Complete	Complete	Complete	Complete	Complete	One Complete	
Y Deflection Amp.	Complete	Complete	Complete	Complete	Two Complete	One Complete	
Y Sweep Attenuator	Complete	Complete	Complete	Complete	Complete	One Complete	
Focus Current Regulator	Complete	Complete	Complete	Complete	One Complete One In Work	One Complete	
1 KV. (for P.M.)	Complete	Complete	Complete	One Complete	Complete	One Complete	
20 KV.	Complete	Complete	Complete	Complete	Complete	One Complete	
Optisyn Pre - Amp.	Complete	Complete	Complete	Complete	Complete	Complete	

PHASE DIAGRAM FOR PRINTER

<u>ASSEMBLY</u>	<u>PRE DESIGN</u>	<u>DESIGN STATUS</u>	<u>RELEASED</u>	<u>PURCHASED PARTS</u>	<u>FABRICATION</u>	<u>ASSEMBLY</u>	<u>TEST AND REMARKS</u>
Structure	Complete	Complete	Complete	Complete	One Complete Three in Work	In Work	
Crt. Housing	Complete	Complete	Complete	In Work	One Complete		
Crt. Elect. Parts	Complete	Complete	One Complete	One Complete	One Complete		
Track Assembly - X Drive	Complete	Complete	One Complete	Complete	One Complete	In Work	
Lead Screw					One Complete	Complete	
Drive Assembly - "X"	Complete	Complete	Complete	Complete	One Complete		
Film Index	Complete	Complete	Complete	Complete	Complete	One Complete	
Lens Board	Complete	Complete	Complete	Complete	One Complete	One Complete	
Valve (Pneu & Vac)	Complete	Complete	Complete	Complete	Complete	One Complete	
Platen	Complete	Complete	One Complete	Complete	One Complete Three in Work	One Complete	
Cassettes	Complete	Complete	Complete	Complete	Two Complete Six in Work	Two Complete	
Doors	Complete	Complete	Complete	Complete	3 Sets in Work 1 Set Complete		
Vac. Pump							
Focus Current Regulator	Complete	Complete	Complete	Complete	One Complete	One Complete	
20 K.V.	Complete	Complete	Complete	Complete	One Complete	One Complete	
"X" Defl. Amp.	Complete	Complete	Complete	Complete	One Complete	One Complete	
"Y" Defl. Amp.	Complete	Complete	Complete	Complete	One Complete	One Complete	

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PHASE DIAGRAM FOR CONSOLE

ASSEMBLY	PRE DESIGN	DESIGN STATUS	RELEASED	PURCHASED PARTS	FABRICATION	ASSEMBLY	TEST AND REMARKS
1. Rack	Complete	Complete	Complete	1 Unit	95% Complete	90% Complete	
1. Monitor	Complete	Complete	Ordered	Complete	Received	One Modified	Some modifications will be necessary
1. Master Control	Complete	Complete	In Work	Complete	In Work		
1. Sweep Amplifier	Complete	Complete	One Complete	One Complete	One Complete	In Work	
1. Transportape	Complete	Complete	Complete	Complete	Complete	One Complete One in Work	
1. Tape Reader	Complete	Complete	One Complete	1 on hand	Complete	Complete	
1. Relay Control Chassis	Complete	Complete		Integral with reader	One Complete	One Complete	
1. Program Control	Complete	Complete	Complete	One Complete	One Complete	One Complete	
1. Film Index Servo	Complete	Complete	Complete	1 Unit	In Work	In Work	
1. Scan Servo	Complete	Complete	Complete	1 Unit	In Work	In Work	
1. Scan Comparator	Complete	Complete	Complete	1 Unit	One Complete Three in Work	One Complete Three in Work	
1. Scan Computer	Complete	Complete	Complete	Complete	One Complete Three in Work	In Work	
1. Power Supply - 28 VDC	Complete	Complete	Complete	Complete	2,3,4 In Work	Complete for 1	
2. Power Supply 300V	Complete	Complete	Complete	Complete	One Complete One in Work	Complete for 1	
1. Power Supply 125V	Complete	Complete	Complete	Complete	Complete for one	Complete for 1	
Cables (internal)	Complete	Complete	Complete		In Work		